CORE

The Voice of Mineral Exploration/Summer 2017

IN CONVERSATION WITH PDAC'S NEW PRESIDENT GLENN MULLAN

GENDER DIVERSITY IN MINING

DEFENDING SUPER FLOW-THROUGH: A PDAC ADVOCACY SUCCESS

PDAC 2017 Convention: Exceeding expectations

PDAC
PROSPECTORS & DEVELOPERS ASSOCIATION OF CANADA

CORE
The Voice of Mineral Exploration
Summer 2017

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INDUSTRY NEWS

Changes proposed to reporting thresholds for GHG emissions

Environment and Climate Change Canada (ECCC) has put forth a proposal to conduct consultation activities related to its Greenhouse Gas Emissions Reporting Program (GHGRP) to better inform Canada's national greenhouse gas (GHG) inventory. ECCC proposed to lower the reporting threshold from 50,000 tonnes to 10,000 tonnes of CO_2 equivalent, starting with 2017 data.

New roads for the North

The Federal Government has announced that they will pay 25 per cent of the cost to build an all-season road to Whati, Northwest Territories, through the P3 Canada Fund. The Tlicho road will join the Tlicho community of Whati to the Mackenzie Highway, providing improved transportation access for the mineral and mining industry operating in the region. Supporting mineral exploration in remote and northern Canada is a PDAC priority and was one of the association's recommendations for Federal Budget 2017.

PDAC accompanies Minister of Natural Resources to Mexico

PDAC President Glenn Mullan accompanied Canada's Natural Resources Minister Jim Carr on his visit to Mexico in February. Following the visit, the North American Energy Ministers Meeting was held in Winnipeg where Minister Carr signed a memorandum of understanding (MoU) with Mexico's Economy Minister Ildefonso Guajardo Villarreal to solidify our countries' close bilateral relationship. The MoU covers geoscience, clean innovation and corporate social responsibility, in addition to sharing best practices in water management and the use of renewable energy.

Finding the Win-Win in company-community agreements

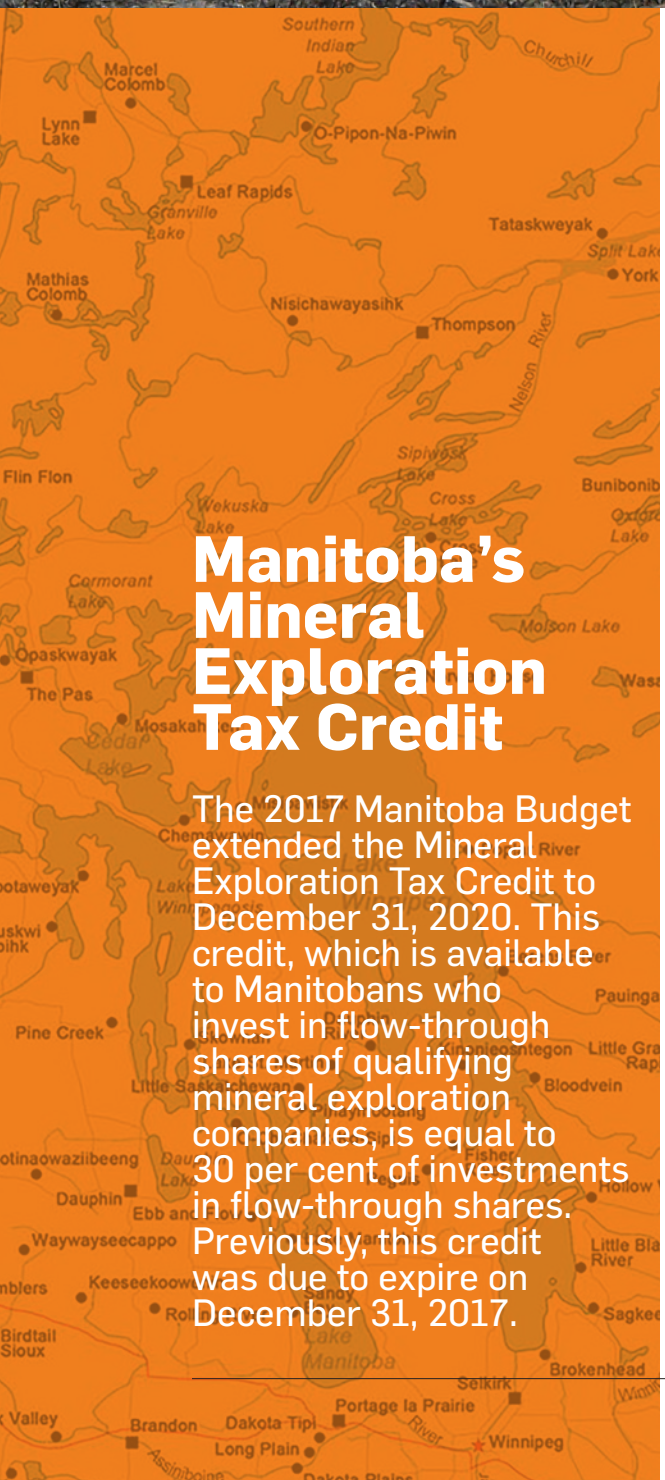
The Conference Board of Canada's Centre for the North (CFN) released its report *Finding the Win-Win in Major Project Agreements: Lessons From Indigenous Groups and Industry Proponents* in March. Given the growing importance of major project agreements, this research aims to better understand the context and elements underlying successful company-community agreements.

Clean energy resources and projects map

Natural Resources Canada released its second edition of the Map of Clean Energy Resources and Projects (CERP) in Canada. Seven new layers were added in the latest edition. They explore Canada's biomass, geothermal and uranium resource potential, as well as clean technology incubators and accelerators, upcoming major clean energy projects, nuclear stations, and geothermal heating facilities in Canada. The CERP map has also been updated to show clean energy test centres and energy generating stations in Canada for hydro, tidal, wind and solar.

Canada back on top as mining destination

Saskatchewan ranked as the world's top mining jurisdiction, followed second by Manitoba, in the *Fraser Institute's Annual Survey of Mining Companies 2016*. The survey rates 104 jurisdictions around the world based on geologic and policy attractiveness. The survey also shows that Canada is competitive globally when it comes to approving exploratory mining permits, although some provinces are falling behind, and jurisdictions in the U.S., Australia and Scandinavia are more transparent and offer more certainty to miners in the permitting process.



Manitoba's Mineral Exploration Tax Credit

The 2017 Manitoba Budget extended the Mineral Exploration Tax Credit to December 31, 2020. This credit, which is available to Manitobans who invest in flow-through shares of qualifying mineral exploration companies, is equal to 30 per cent of investments in flow-through shares. Previously, this credit was due to expire on December 31, 2017.

Federal reviews underway

There are currently a number of federal reviews underway. PDAC continues to monitor and engage on these developments.

- The Expert Panel reviewing Federal Environmental Assessment Processes released its report *Building Common Ground: A New Vision for Impact Assessment in Canada*. Comments on the report were submitted in May.
- The Standing Committee on Fisheries and Oceans has tabled its report on the review of changes to the *Fisheries Act*. PDAC also submitted comments on this report in May.
- The Standing Committee on Environment and Sustainable Development released its report on protected areas. The recommendations were detailed in *Taking Action Today: Establishing Protected Areas for Canada's Future*.
- The Standing Committee on Transport, Infrastructure and Communities has released its study of the *Navigation Protection Act*.

Map of Top 100 Exploration Projects

Natural Resources Canada's Lands and Minerals Sector released its Map of the Top 100 Exploration and Deposit Appraisal Projects of 2016. It displays geographically by province and territory the 100 top-spending, off-mine-site exploration and deposit appraisal projects of 2016.

NWT Mining Incentive Program

Funding for the Northwest Territories (NWT) Mining Incentive Program (MIP) was increased to $1 million for 2017-2018. The MIP provides funding to prospectors (up to $25,000) and exploration companies (up to $200,000) who propose new exploration projects or are already carrying out NWT mineral exploration work. The MIP is intended to stimulate and sustain mineral exploration activities throughout NWT and reduce risks associated with grassroots mineral exploration.

Q&A

PDAC's new President shares his vision for the association, his love for prospecting, and how juniors can succeed in today's ever-changing environment.

Q. What are some of your goals for PDAC in your role as President?
A. During my tenure, I have two objectives. Firstly, I want to see some attention return to independent prospectors and people working for themselves. These roles are a focal point of the mining industry and have created much wealth and opportunity in Canada. Work has been done to highlight the best companies, both majors and juniors, and I would like to see this complemented by encouraging young people and students into self-employed prospecting careers.

My second objective is more local. As a Québecer living in Val-D'Or, I would very much like to see increased membership and participation in the PDAC Convention from my home province. I hope to accomplish this through new and collaborative arrangements with organizations, and through increased PDAC communications. Québec is an important mineral producer and cutting-edge explorer, and has set many positive precedents in our industry. I want to see it better represented as a key partner that is more proportional to its population and mineral production.

Q. What are some things that PDAC has done well over the past five years?
A. A few areas stand out to me. The Student-Industry Mineral Exploration Workshop (S-IMEW) has grown over the past decade, and now some of the graduates are making their mark on the industry, which is something we can all be proud of.

Aboriginal affairs is one of PDAC's priority areas. It is well-represented at the convention through the Aboriginal Program, which brings success stories and achievements to life while also offering opportunities to discuss challenges.

Corporate social responsibility is a major theme for PDAC and the rest of the world. I believe that one of the top reasons folks travel from 125 countries to attend the PDAC Convention is because of the way we do things here in Canada, and the way Canadian companies operate around the world. There are some great stories, case studies and experiences to be shared by our corporate members, including several operating in remote regions of Canada that are creating new opportunities and wealth for the nation.

Q. What was your involvement with PDAC prior to being President?
A. As hard as it is to believe, 2017 was my 42nd PDAC Convention. I have been attending since I was 16 years old and have not missed a single one. About 10 years ago, a Past President of PDAC approached me about volunteering with the association. I became involved on several committees and eventually chaired one of them. The importance of networking became extremely apparent once I was on a committee, as I was suddenly working closely with peers from across Canada and sometimes internationally. Eventually, I joined the PDAC Executive Committee that led to my election as Second Vice President. It has been a very positive experience and one that gives much more than it takes. The value I bring back to my little company and "day job" far outweighs the time requirement involved.

In conversation with PDAC's 36th President, **Glenn Mullan**

PDAC
2017
WHERE THE WORLD'S
MINERAL & FINANCE
INDUSTRY MEETS
TMX
Andrew
Cheatle
TMX
Glenn J.
Mullan

STUDENT
2017
Elliot
Wehrle
Glenn J.
Mullan

Q&A

Q. Tell us a little bit about your career path and how it led to where you are now.
A. It's a simple story. I read *Klondike* by Pierre Berton when I was 16 years old, and it blew my mind. Many other books followed, all filled with stories about discoveries, prospectors and remote locations across Canada and Australia. I loved the idea of setting out with almost nothing and creating wealth in the face of constant obstacles.

In the 1980s, I obtained a prospectors license in both Québec and Ontario and began staking claims and making deals—including some at the Royal York Hotel during the PDAC Convention—which paid my way through Concordia University in Montreal. The day of graduation I moved to Val-D'Or and started my career.

One project that I staked as a grassroots claim is now an operating Ni-Cu-PGE mine, owned by an international nickel producer. My business has dabbled in many other projects and places, however, Canada is still the best place to explore, develop and operate a mine, bar none.

Q. Over the course of your career, what major developments do you feel have played a role in making Canada's mineral exploration and mining sector a global powerhouse?
A. Globalization was a phenomenon that Canadians embraced with little fanfare and little flag waving. We simply went anywhere with favourable geology. Most geologists are not really urban folk and going to the "boonies" comes naturally, which is a good thing given that most mines are not downtown.

China's emergence as a global powerhouse brought an appetite for base metal commodities. This was recognized early by Canadians, and successful exploration programs in Africa, South America and here in Canada found new and willing buyers on an unprecedented scale. Capital markets evolved and the exchanges aligned to create an improved national agenda, and succeeded in attracting international capital, both in the form of companies listing here, and in new equity for existing companies and projects.

Building mutually-beneficial relationships with Aboriginal communities here in Canada has opened more areas for mineral exploration while also generating mutual economic opportunities. Many excellent examples of company-community partnerships have emerged over the past decade.

Q. How can juniors, and even mid-tier to large companies, succeed in today's volatile economic climate?
A. There are no guarantees for success and there never will be. But there are a few things that can be done to mitigate risks. Firstly, be focused. It is too easy to chase after everything everywhere. Secondly, know your market, know your position, and adapt to changing conditions. Thirdly, be creative. Being in front of changing trends is less expensive than fixing problems that could have been avoided. And lastly, some things can't be fixed, or at least not now. Move on.

Q&A

BIOGRAPHY

Glenn Mullan is the 36th President of the Prospectors & Developers Association of Canada (PDAC).

Over his +40-year career, Glenn has followed a traditional exploration and prospecting path. He began with contract geophysical surveys, where he caught the bug for being in the North and working in remote locations, then began prospecting and staking mining claims independently while completing his B.Sc. in Geology and Earth Sciences at Concordia University. He later conducted contract exploration geological services, mostly located in Northern Ontario and Québec.

Glenn would go on to broker numerous prospector/vendor transactions with arms-length public companies, and form a public company in 1999 that evolved into Ni-Cu-PGE producer that currently employs more than 300 people in Northern Québec. Glenn has a broad spectrum of industry-related experience—across Canada and Africa—including early-stage acquisitions and exploration through PEA, BFS, permitting and mine development-stages, as well as CSR initiatives, financing and corporate development. That said, he much prefers early-stage grassroots exploration in remote locations and near his home base in Val-D'Or, Québec.

Currently, Glenn serves as President and CEO of Golden Valley Mines Ltd, where his main area of interest continues to be grassroots early-stage exploration, primarily for base and precious metals. Glenn has been a PDAC member for over 40 years, serving on the Executive Committee, Awards Committee, CSR Committee and the Governance & Nominating Committee.

"I would love to see a resurgence of independent prospectors across the nation, and there is no reason that this shouldn't happen. Prospecting is a terrific vocation to embrace."

Q. What is something you feel could be done better in Canada's mineral exploration and mining industry?
A. One of the most common complaints I hear from public companies is related to regulations and costs. There is an enormous financial burden with being public. Provinces and territories could do more together to encourage exploration and development, similar to what stock exchanges did to align themselves into a stronger financial position. Geology knows no boundaries, and much influence in exploration comes from our legal and social framework. Infrastructure in the North is not a new issue, but it is a critical one that must be improved, similar to what other countries are doing.

I would love to see a resurgence of independent prospectors across the nation, and there is no reason that this shouldn't happen. Prospecting is a terrific vocation to embrace.

Q. If you could choose one place to explore in Canada where would it be? Why?
A. Val-D'Or, Québec. Aside from being my home, I believe that it's the best place in the exploration, development and mining industry. It is a great town with sound infrastructure and includes access to the far North. In this region, we are fortunate to have supportive municipal and provincial authorities. It's also an ideal place to raise a family.

Q. The industry's skills shortage comes up every now and again. Are you concerned about new talent coming through the system? How can graduates be encouraged to go into mining?
A. The PDAC Convention attests to the growth in the student sector over the past few years, and some of the new academic initiatives in Canada demonstrate that these clusters seem to be generating new ideas, talent and attracting a new breed of student. The established Earth science institutions from British Columbia to Nova Scotia have a great reputation and have helped generate explorers who do things properly and in consideration of the communities in which they operate. **c**

PDAC 2017 Convention: Confidence restored

The 85th edition of the PDAC Convention exceeded all expectations, a reflection of the growing confidence that has returned to the mineral exploration and mining sector. The PDAC 2017 Convention—the world's largest industry event—attracted more than 24,000 investors, analysts, mining executives, prospectors, geologists, government officials and students. "The mineral exploration and mining industry is cyclical in nature and has faced a variety of economic challenges over the past several years, but optimism has always remained and it's fantastic to see this being reflected at the PDAC Convention," says PDAC President Glenn Mullan, referring to sold out exhibitor space, investor meetings, Short Courses, Mineral Outlook Luncheon, and Awards Gala. "There was an upbeat vibe throughout the convention—a positive sign for the sector going forward."

PDAC 2017 HIGHLIGHTS

- During his address at the Media Reception, the Honourable Jim Carr, Canada's Minister of Natural Resources, announced the renewal of the METC for one year, along with the maintenance of the flow-through share system. A further 20 Parliamentarians attended, including three Cabinet Ministers.
- An outstanding Technical Program featured Mark Cutifani (Anglo American), who led the *Commodities and market outlook* session, while Mark Bristow (Randgold Resources Limited), Lukas Lundin (Lundin Mining Corporation), and Roque Benavides Ganoza (Buenaventura) spoke during the *Keynote session: What drives success in our industry?*

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Photos: envisiondigitalphoto.com

- The sold out Mineral Outlook Luncheon featured Dr. Dambisa Moyo—one of *TIME Magazine*'s 100 Most Influential People and *New York Times* best-selling author—who discussed *Global shifts in economics, geopolitics & business: What's it going to take to be successful?*

- Attendees enjoyed continuous networking opportunities: 700 people celebrated at the sold out Awards Gala & After Party where seven industry leaders were honoured in recognition of their outstanding contributions to the minerals and mining industry; and the new and free Grand Finale saw over 500 attendees celebrate the success of PDAC 2017.

- Many Short Courses sold out and, for the first time, Laurentian University's Mineral Exploration Research Centre offered a workshop entitled *New exploration methods for base and precious metal deposits: How to increase success in Greenstone Terranes.*

- Barrick hosted an Electric Car Race using aerospace-grade construction materials and some of the best technology on the planet, from its solar panels to the battery.

- The *Visual and Augmented Reality for the Mining Industry* session explored next platforms for communication and training and how these technologies will dramatically impact the future of the mining industry.

- The Royal Ontario Museum once again displayed its visually-stunning Kirwin Collection, built from hundreds of deposits from around the world.

2ND INTERNATIONAL MINES MINISTERS SUMMIT (IMMS)

PDAC, in partnership with the World Economic Forum, hosted the International Mines Ministers Summit (IMMS) for the second year, bringing together 25 Ministers, responsible for mining, from around the world. The event, hosted at BMO, provided an important setting for the global mining community to explore challenges and opportunities affecting the industry. This year's summit focused on innovation in the mining industry and the clean innovation agenda.

"PDAC is seen as the voice of responsible mineral exploration and mining, not only in Canada but also abroad," says PDAC Executive Director Andrew Cheatle. "We must continue to build strong working relationships, both nationally and internationally, and the PDAC Convention is the best opportunity to make these connections and showcase our industry and its importance to social-economic development."

PROGRAMS

The **Student Program** offered young professionals a unique opportunity to connect with industry leaders and peers from all over the world. More than 1,200 students attended the convention, including many who took advantage of mentoring services courtesy of Patrick McAndless. The Student-Industry Networking Luncheon also allowed industry to recruit students for summer work. S-IMEW participants for 2017 and the Mary-Claire Ward Geoscience Award recipient were also announced. The Student-Industry Forum featured discussions about women in mining, career opportunities, mentoring, and the role of gender when hiring.

A highlight of the PDAC Convention, the **Aboriginal Program** provided an important platform for fostering cooperative, respectful and mutually-beneficial relationships between Aboriginal communities and industry. The Aboriginal Program consisted of four sessions:

- *The Mineral industry and Indigenous communities – Canadian and international experiences*
- *The Aboriginal Forum: Reconciliation – the new context for relationship building in Canada*
- *Aboriginal law, Indigenous frameworks and regulatory regimes: Examining the evolving landscape*
- *Aboriginal communities and the mineral industry: Partnerships, leadership and perspectives*

This year marked the eighth consecutive **CSR Event Series**, attracting more than 600 attendees from across the world. Programming featured presentations and panel discussions highlighting key aspects of social and environmental performance. Sessions focused on topics such as the importance of a multi-stakeholder approach to development, the mining sector's "social contract", tools for minimizing social conflict, effective company-community water management, and the impetus for gender equality in the mining sector.

With 2016 marking a pivotal year for many commodity prices, the PDAC 2017 **Capital Markets Program** created a forum for learning and dialogue. The two opening sessions focused on financiers' perspectives, hosting heads of mining groups from all major Canadian banks and leading private equities. The third session gathered a panel of industry veterans who debated the common assumptions and approaches that executives, investors and other stakeholders adopt regarding country risk and how it affects their decisions. The Capital Markets Program concluded with a panel discussion on proxy fights and other actions taken by activist shareholders, and how to approach such situations. c

PDAC 2017 CONVENTION STATISTICS

TRADE SHOW & TRADE SHOW NORTH

867 Booths

490 Exhibiting Organizations
68 Exhibiting Governments

24,161 Convention Attendees

Outside of Canada the largest number of attendees came from: **USA, Australia, Peru, United Kingdom, Mexico, Brazil, Chile, China, Argentina, Germany, South Africa** and **Finland**

26% International Attendees
130 Countries Represented
1,256 Student Attendees
500+ Self-identified Aboriginal Attendees
270 Accredited Media
45 Sponsors
3,807 Investors
42 Media Partners

MINING MARKETPLACE

26 Exhibiting Organizations

MOBILE WEBSITE

46,749 Mobile Website Visits

INVESTORS EXCHANGE

470 Booths
443 Exhibiting Organizations
13 Prospectors Tent Booths

CORE SHACK

40 Exhibiting Companies

PRESENTATIONS & WORKSHOPS

19 Technical Sessions
8 Short Courses
35 Presentation & Reception Rooms
102 Corporate Presentations
Forum for Investors Presentations

472 Speakers

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2017 Budget

The Government of Canada extends the METC while furthering its commitment to develop infrastructure, innovation and skills training.

BY DEANNA PAGNAN & RAN MAOZ

On March 22nd, the Honourable Bill Morneau, Canada's Minister of Finance, tabled Budget 2017, *Building a Strong Middle Class*, which outlines the Government of Canada's plan for governing in the year ahead. Budget 2017 built on many of the commitments highlighted in Budget 2016, including funding for infrastructure and skills training.

"A number of initiatives included in Budget 2017 are in line with PDAC's recommendations to ensure Canada's mineral exploration and development sector can further discover and develop the natural resources our nation is blessed with for the benefit of all Canadians," says PDAC President Glenn Mullan.

RENEWAL OF THE MINERAL EXPLORATION TAX CREDIT (METC)

As announced by the Honourable Jim Carr, Minister of Natural Resources, at the Media Reception at the PDAC Convention 2017, Budget 2017 committed to extending the 15 per cent Mineral Exploration Tax Credit (METC) for flow-through share investors until March 31, 2018. PDAC was particularly pleased to see this extension, given the METC and the underlying flow-through share mechanism were under review by Finance Canada.

"The METC has been renewed by successive governments because it is a proven, effective incentive that has stimulated investment in grassroots exploration and created greater opportunity," says PDAC Executive Director Andrew Cheatle. "Without this vital tax credit there will be less exploration, which means less mineral discoveries, and ultimately, less economic benefits that are generated by producing mines."

Renewal of the METC and maintenance of flow-through shares was a key recommendation of PDAC's pre-budget submission and advocacy leading up to Budget 2017.

INFRASTRUCTURE

In the 2016 *Fall Economic Statement*, the Government of Canada announced plans to establish a Canada Infrastructure Bank—an arm's-length organization that will work with provincial, territorial, municipal, Indigenous and private sector investment partners to transform the way infrastructure is planned, funded and delivered in Canada. The Canada Infrastructure Bank will be responsible for investing at least $35 billion over 11 years, using loans, loan guarantees and equity investments. These investments will be made strategically, with a focus on large, transformative projects such as regional transit plans, transportation networks, and electricity grid interconnections.

The Government will soon propose legislation establishing the Canada Infrastructure Bank, with a goal of having the Canada Infrastructure Bank operational in late 2017.

PDAC has called for the creation of a northern infrastructure bank since 2013 to unlock the mineral potential of remote Canada, and supports the creation of the Canada Infrastructure Bank. PDAC looks forward to working together with the Government to ensure the mandate of the Canada Infrastructure Bank includes adequate priority for the significant infrastructure needs of resource-rich remote and northern areas.

Given the unique infrastructure needs of rural and northern communities, the Government also committed to investing $2 billion over 11 years to support a broad range of infrastructure projects. The funds will be allocated to provinces and territories on a base plus per capita allocation basis.

Budget 2017 also included the creation of a National Trade Corridors Fund to address urgent capacity constraints and freight bottlenecks at major ports of entry, and to better connect rail and highway infrastructure. Budget 2017 committed to support the fund's activities, with at least an additional $5 billion provided through the Canada Infrastructure Bank to address trade and transportation priorities. The fund will also look for ways to improve the flow of supplies to northern communities, unlock economic development in Canada's three territories and create jobs.

ACCESS TO SKILLS DEVELOPMENT AND TRAINING FOR INDIGENOUS PEOPLE

Budget 2017 includes various initiatives to support skills training, including programs to support Indigenous skills training, which PDAC advocated for in its pre-budget submission. Budget 2017 proposes to invest $50 million in 2017-2018 in the Aboriginal Skills and Employment Training Strategy (ASETS), which helps Indigenous People in all parts of the country get the skills and training necessary to participate in the economy and contribute to the success of their communities. The Budget also proposes to increase funding to the Post-Secondary Student Support Program by $90 million over two years beginning in 2017-2018, and to provide Indspire, an Indigenous-led charitable organization that helps Indigenous students attend post-secondary institutions and find jobs, with $5 million over five years, conditional on $3 million per year in matching funds from the private sector. **c**

Deanna Pagnan is the PDAC's Senior Manager of Public Affairs. Ran Maoz is the PDAC's Analyst of Tax Policy & Capital Markets.

Budget 2017 included other notable initiatives aligned with PDAC program areas.

ABORIGINAL AFFAIRS

- **$25 million over five years to support a pilot Indigenous Guardians Program. This initiative will give Indigenous People greater responsibility and resources to manage their traditional lands and waterways, and will facilitate partnership with Indigenous communities in monitoring ecological health, maintaining cultural sites, and protecting sensitive areas and species.**
- **$3.1 million over three years to establish a secretariat that will support the Working Group on the Review of Laws and Policies related to Indigenous Peoples.**
- **$24 million per year on an ongoing basis to support the timely resolution of specific claims in order to address past grievances related to historic treaties and other obligations.**

NORTHERN ECONOMIC DEVELOPMENT

- **$21.4 million over four years to the Northern Responsible Energy Approach for Community Heat and Electricity Program to support renewable energy projects in communities that rely on diesel for electricity and heating.**
- **$220 million to reduce the reliance of rural and remote communities south of the 60th parallel on diesel fuel, and to support the use of more sustainable, renewable power solutions.**
- **$400 million in an Arctic Energy Fund to address energy security for communities north of the 60th parallel, including Indigenous communities.**

INNOVATION

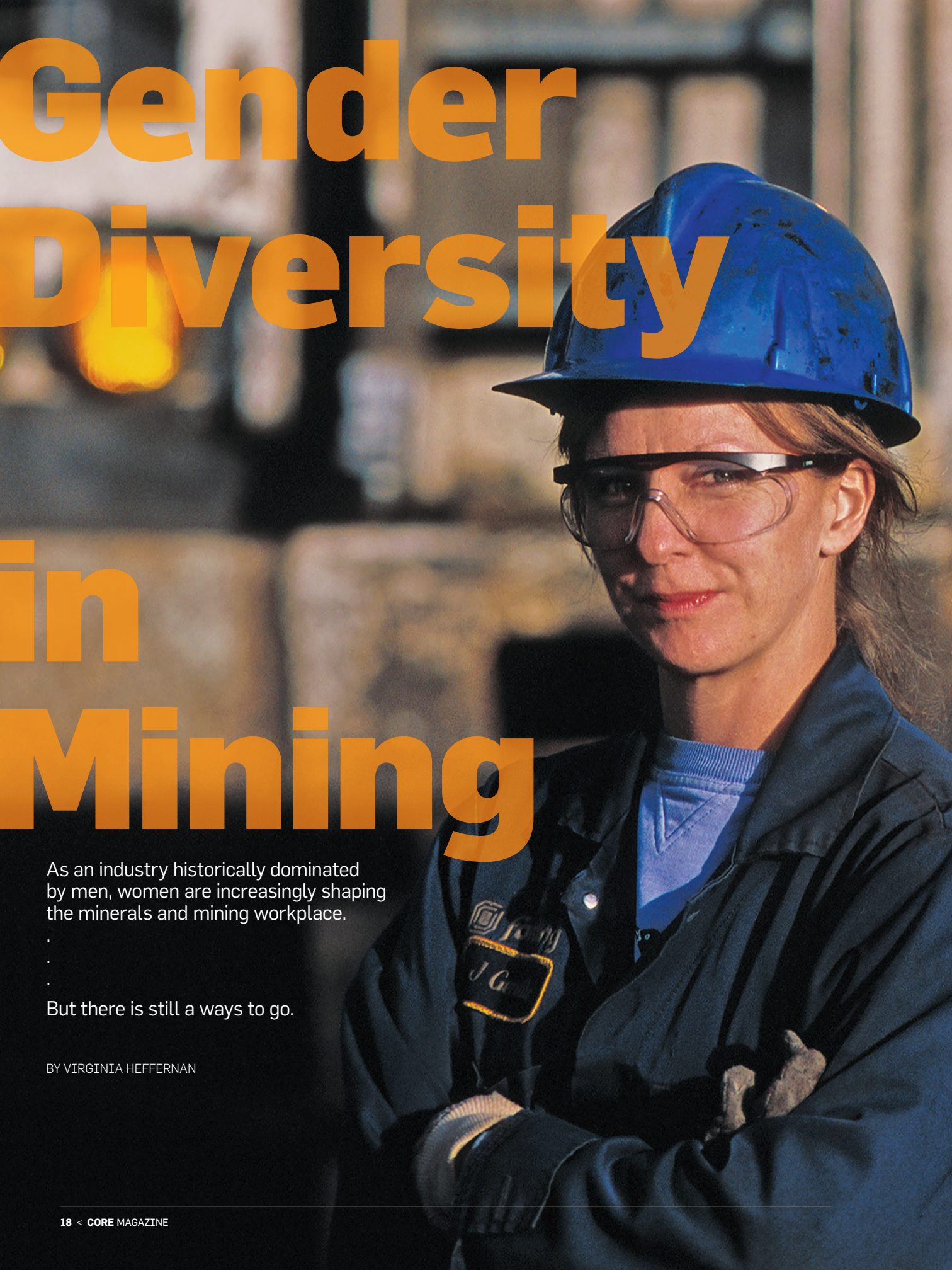
- **$200 million over four years to Natural Resources Canada, Agriculture and Agri-Food Canada and Fisheries and Oceans Canada to support clean technology research, along with the development, demonstration and adoption of clean technology in Canada's natural resources sectors. Technologies at varying stages of maturity will be eligible, and eligible recipients will include industry, academia, federal laboratories and other research organizations.**

GENDER EQUALITY

- **Measures aimed at reducing the gender wage gap and encouraging greater workforce participation among women.**

More info available at www.budget.gc.ca

Gender Diversity in Mining



As an industry historically dominated by men, women are increasingly shaping the minerals and mining workplace.

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But there is still a ways to go.

BY VIRGINIA HEFFERNAN

The evidence is mounting. Study after study shows that organizations employing more women boost profit margins, improve safety, and even reduce wear and tear on equipment.

Yet women represent just **17%** of Canada's mining workforce—a marginal increase from a decade ago, but still anomalously low even compared to other male-dominated industries, according to the Mining Industry Human Resources Council (MiHR). Women in boardrooms are equally underrepresented. A *Financial Post* summary in 2015 found that, on average, women make up **18%** of the Board of Directors for the Top **25** companies of the S&P/TSX Materials Index. Representation drops to only 8% for the top 500 global mining companies surveyed by Women in Mining (WIM) UK.

Can the numbers be attributed to a shortage of qualified women? Under-qualification is partly to blame, but it's not the whole story. Universities are graduating more women than men, and not just from humanities. In Australia and Canada, slightly more than half of the students enrolled in natural and physical sciences are women, according to Catalyst, a non-profit organization promoting workplace inclusion.

Are women simply not as interested in the careers mining has to offer? That's also only partly true. MiHR's analysis of **70** occupations shows that mining has a lower representation of women compared to the same occupation in other industries, regardless of whether the role is traditionally female (e.g. human resources), or male (e.g. physical sciences and trades).

Even if women choose to join the industry, many don't stay. This "leaky pipeline" (30% of graduate recruits are women, but this proportion drops to **10%** in mid-level management, according to WIM UK's survey) further impedes progress towards gender diversity.

Workplace culture is one of the largest barriers to women. In a recent survey of employees by MiHR, one-third of the female respondents said they had experienced harassment, bullying or violence in their workplace compared to **16%** of men. Women also found integrating work with personal and family demands challenging, particularly in remote locations. At times, they felt they were being held to a higher standard than their male colleagues.

Lack of opportunity for career advancement is another major deterrent. Women are often unable to navigate the pathways to progress because they have few mentors and networks to ease the way, according to the MiHR study.

Recognizing an opportunity, some industry players are taking concrete steps to improve. The momentum is building partly because companies have no choice but to include women if they wish to remain competitive. MiHR predicts that the Canadian industry alone will need to hire more than **100,000** employees over the next decade. And studies by organizations such as Catalyst, McKinsey and Credit Suisse present a solid business case for diversity.

The herd instinct is another factor. "The more companies hear that someone is doing something about a problem, the more they want to join the club," says Anna Tudela, Goldcorp's Vice-President of Diversity, Regulatory Affairs and Corporate Secretary, who founded a program to help women at Goldcorp advance through education, skills training and mentorship.

Her Creating Choices program is one of several initiatives designed to encourage female participation in the industry from site to C-suite. Some involve targets, whereas others focus more on training, mentorship or changes in workplace culture. At the grassroots level, they are led increasingly by a new generation frustrated with the status quo that pervades the graying industry. As Tudela says: "For millennials, a job is a job. It does not have a gender."

QUOTAS AND TARGETS

Setting targets is an effective way to encourage diversity because what is measured is more likely to be accomplished. And the glacial pace of change may demand them. BHP Billiton is the first mining company to set the goal of having gender parity in their **65,000**-strong workforce by 2025, based on evidence that its "most-inclusive operations" perform **15%** better than the company average. BHP plans to reach parity by requiring managers to question unconscious biases, challenge dated stereotypes, and introduce more flexibility into the workplace.

In Canada, Cameco has diversity and inclusion targets tied to annual bonuses, and both Goldcorp and Teck have joined the **30%** Club, an initiative designed to increase board seats held by women to **30%** by 2019. Goldcorp has already attained that level as three of its nine board members are women.

MENTORSHIP & TRAINING

Goldcorp is also leading in terms of mentoring and skills training. More than **1,700** women have graduated from Tudela's training program launched in 2011 and now offered at every Goldcorp operation worldwide. In 2015, the company rolled out Phase 2 of the program, called Growing Choices, to teach women how to brand themselves and balance work and life commitments. This upcoming November, it will launch a third component, Future Choices, so that women displaced by mine closures know what their career options are.

"Rather than set quotas, we have built diversity into the corporate scorecard so that all our mines are motivated to improve their numbers."

But there is still work to be done at Goldcorp, where women account for only **10%** of the **15,000**-strong workforce. "Rather than set quotas, we have built diversity into the corporate scorecard so that all our mines are motivated to improve their numbers," says Tudela.

GRASSROOTS LEADERSHIP

Women Who Rock, a three-year old organization focused on a younger generation of professionals, also values mentorship as a means to help women advance their careers. Its flagship event is an annual auction that gives students or recent graduates the chance to bid for a one-hour mentoring session with a Canadian mining leader.

"Based on the feedback, most of the women have found the mentoring very helpful," says Elena Mayer, Senior Client Relationship Manager for PwC Canada, who founded Women Who Rock as a networking option for younger professionals in Toronto and now oversees an organization of **600** active members, male and female. "The relationships often extend beyond the initial meeting and some lead to job offers."

The next generation is also taking the reins at Women in Mining (WIM) Toronto, an organization founded in 1969 by a handful—or really *the* handful—of women geologists who felt a need for solidarity. WIM Toronto's mandate is to connect women with opportunities and champions in the sector, share knowledge through relevant speakers and content, and inspire women by highlighting achievers, says Tara Gilfillan, Principal of Corporate Development at Halyard Inc., the new co-chair of WIM Toronto along with Mary Mackenzie, Executive Director of Projects at Mine Staffing International.

WIM Toronto is one of several branches of WIM Canada, a non-profit organization founded in 2009 with the simple yet powerful message: "In our industry, competency is what matters." WIM Canada—itself one of several international WIM groups—recently released a robust action plan for Canadian mining companies wishing to improve their diversity record.

IMPROVING THE CULTURE

To make the industry more attractive to women, MiHR suggests companies implement industry-specific strategies to support work-life integration, accelerate the current momentum toward greater gender inclusion by changing the industry narrative, and equip managers and employees with the skills required to create more inclusive workplaces.

AREVA supports work-life balance, for example, by providing flexible work schedules, daycare, personal leave days, teleworking, and site job sharing programs that are particularly important to women who continue to shoulder most child and elderly parent care, but that will also help the company retain men. At Rio Tinto, employees can take a course—reportedly the highest rated and most accessed e-learning course offered by the company—that examines and challenges ingrained behaviour.

Approaches to gender diversity vary widely, but they have one common goal: To attract more women to the industry and keep them there. Bring them on, all of them, says Danièle Spethmann, outgoing co-chair of WIM Toronto and CEO of Champagne Resources, who has experienced her share of bias in a 30-year career as a geologist. "Until it's not an issue anymore. Until we don't need special clubs for women, any initiative is welcome." **c**

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CORE FILE

A Tool For Success

To showcase the critical role the Mineral Exploration Tax Credit (METC) and super flow-through share system play in supporting early stage exploration in Canada, PDAC undertook extensive research to understand how it works. Here is what we found.

BY NADIM KARA

Without super flow-through shares (SFTS), the successful, globe-spanning company we now know as Agnico Eagle Mines would not exist. This was just one of the astonishing insights gleaned from PDAC research into the impact of this one-of-a-kind fiscal incentive that supports early stage mineral exploration in Canada. Tax policy is arcane at the best of times, and rather than trying to explain how flow-through shares work, this article tries to shine some light on the impacts of this innovative tax policy measure.

THE ONLY GAME IN TOWN: SUSTAINING COMPANIES DURING MARKET DOWNTURNS

While the absolute amount of money raised using SFTS goes up and down in line with the broader business cycles that characterize the industry, PDAC's analysis of financing data has shown that flow-through financing accounts for a larger percentage of the total amount of money raised for mineral exploration in Canada during downturns, highlighting its importance as a counter-cyclical tool. This finding was reinforced by PDAC research in 2016, including the results of a questionnaire distributed by PDAC to its members. Thirty per cent of respondents noted that the primary appeal of super flow-through shares is their ability to raise capital during times when it's difficult to raise "hard dollars" (i.e. financing from other

sources). Almost two-thirds of respondents indicated that the ability to raise money via SFTS helped catalyze additional equity financing subsequently, with over **80%** indicating that it helped attract funding from new investors, beyond their flow-through financing base.

"[Flow-through financing] allowed exploration to continue almost without interruption through the post Bre-X scandal dark years."
– Kerry Curtis, CEO of Cumberland Resources

Two PDAC case studies also reveal the critical importance of SFTS during financial downturns. Cumberland Resources raised $18 million between 1998 and 2002, a time when it was very difficult to finance mineral exploration. During this period, flow-through share financing accounted for between **50%** to **100%** of the total amount of equity financing raised by the company during these tough years. Their exploration work ultimately led to the opening of the Meadowbank mine in Nunavut. Similarly, **100%** of the **$5.5 million** raised by Terrane Metals in 2009, at the depths of the global financial crisis, came from flow-through funds. Their exploration work led to the opening of the Mt. Milligan mine in British Columbia.

LAYING THE GROUND FOR PROSPERITY: MAKING DISCOVERIES, MOVING DISCOVERIES INTO PRODUCTION

The most common exploration activities undertaken with flow-through funds include drilling and geophysical surveys. All of the companies that responded to PDAC inquiries indicated that without flow-through financing, exploration programs would either have been signifi-cantly smaller, or cancelled altogether. Sixty per cent of respondents said that the exploration financed using SFTS led directly to a new discovery, with one-quarter of respondents saying that their flow-through financed exploration activity led to discoveries that have become producing mines.

"[Exploration activity financed by flow-through shares] directly led to the discovery of the over one-million ounce resource [Meadowbank deposit, Nunavut] in 2000."
– Kerry Curtis, CEO of Cumberland Resources

CONTRIBUTING TO SUSTAINABLE DEVELOPMENT: THE SOCIO-ECONOMIC IMPACTS OF FLOW-THROUGH SHARES

While the socio-economic impacts of operating mines are relatively well-known, economic opportunities are also generated by mineral exploration. Over **90%** of questionnaire respondents noted that the exploration activity financed by super flow-through shares generated employment and business development opportunities for the residents of rural and remote communities. Over **80%** generated employment and business development opportunities for Indigenous People and communities.

It is impossible to overstate the importance of the flow-through regime for jobs and investment in the North and Aboriginal communities.
– Trent Mell, President & CEO, First Cobalt Co.

The super flow-through regime can also take some credit for the socio-economic opportunities generated at the production stage, for those mines developing mineral deposits discovered by flow-through financed exploration. Meadowbank mine, for example, distributed **$24 million** in payroll to **300 Inuit employees** in 2015, and spent **$1.3 billion** in local procurement between 2007 and 2015. Mt. Milligan spent **$250 million** in local procurement between 2011 and 2015, and has **60 First Nations** employees (**13%** of the workforce). Both mines have generated tens of millions of dollars in resource-related revenues for various levels of government, in the form of taxes and royalties.

DEFENDING SUPER FLOW-THROUGH: PDAC STEPPING UP TO THE PLATE

Based on this research, PDAC undertook a range of advocacy activities in 2016 to inform the Federal Government's review of the super flow-through share (SFTS) regime, in partnership with regional industry associations and Mining Ministers from across Canada. This advocacy successfully secured the support of Natural Resources Minister Jim Carr and Finance Minister Bill Morneau. As a result, the SFTS regime was maintained in Budget 2017, a significant advocacy win for PDAC and Natural Resources Canada on behalf of the Canadian mineral exploration industry. This is just one more example of how PDAC is working for its members, to support a competitive and responsible Canadian mineral exploration industry. **c**

Nadim Kara is the PDAC's Senior Director of Policy & Programs

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